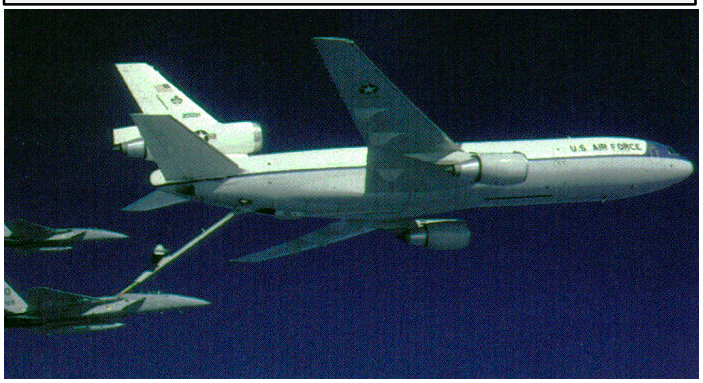
The Tactics Times

The Air Mobility Warfare Center's Combat Tactics Newsletter

Volume I Edition 2

MCM 3-1, Volume 22 Conference

Major Don Carter, AMWC Tactics



The date for MCM 3-1, Vol 22 rewrite conference is quickly approaching. The conference is scheduled for 21 Oct-1 Nov at Nellis AFB. To date three messages have been sent to the field providing information and soliciting input and attendees. If you have not received the message, contact Major Ray Oltman, Major Tom Scolarici, or Major Don Carter for a fax or email copy. A good cross section of tanker expertise is necessary but seating is limited to 30 individuals by the size of the 3-1 conference facility. The 30-day message included a list of attendees, but there may be room for a couple more individual (please call us first!). The two weeks have been scheduled to allow for adequate review and discussion of proposed changes. We hope not to go two weeks, but we'll remain flexible (...the key to air power).

We are still soliciting inputs for MCM 11-212, the unclassified tanker employment manual. This book should include techniques to effectively employ the KC-10 and KC-135 in all potential threat arenas. It should be more than just an unclassified version of Vol 22. To be a true "fundamentals" or "how to" manual it will also have to be closely aligned with current and future aircrew training/operation of the aircraft and its equipment. Inputs can be forwarded to Maj Oltman or myself at DSN 944-1157, FAX 944-1156.

C-141 Bubble Update

TSgt Tom Kenny, AMWC Tactics Development

When I last wrote about the bubble hatch, initial testing was scheduled for June. Due to scheduling conflicts, the first set of tests were conducted in August. The 16th Airlift Squadron from Charleston AFB, SC participating in a Red Flag exercise, enabling the 33d Flight Test Squadron and myself conduct the form, fit and function portion of the test. Findings allowed the 305 AW EMS plastics shop to "fine tune" the bubble locking mechanism. Three sorties were flown against seven threats on the Nellis range both with and without the bubble hatches installed. Captain Chuck "Beef" Caldwell, an F-16 pilot from Adversary Tactics at Red Flag provided Red Air support. Beef flew a variety of rear aspect attacks against the bubble equipped aircraft and initial findings are positive. The aircrews were amazed with the amount of increased visibility that the bubble provides, and earlier detection allowed the scanners (continued on page 2)

We want your feedback!

Want more tactics articles and less news? Let us know! In an effort to tailor the Tactics Times to more to your unit's needs, we need your feedback. Please write to us at AMWC/WCOX-A, 5656 Texas Ave., Ft.Dix, NJ 08640-7400, c/o The Tactics Times. Call us directly at DSN 944-1157 and let us know what you think! Yes, you can contribute and be famous too! See page 2 for details.

In this issue...

G 060 Unit Tactics Training Update

Captain John Golden, AMWC Tactics

In the words of Dallas Cowboy's quarterback Troy Aikman on a popular TV ad, it's time for us to "Get Real".

Last month AMWC Tactics re-wrote the curriculum for AMC's G060 Unit Tactics Training. As you probably know, the old curriculum was full of stuff that wasn't tactics. In an effort to re-new the G060 class--and get real--we dumped all the fluff and did our very best to concentrate on actual tactical techniques and procedures. Soon, your tactics shop will be receiving new guidance for G060, and it will include 1) Combat Mission Planning, 2) Route Selection, 3) Tactical Flying Techniques, 4) Threat Degredation, 5) DS (Defensive Systems) Use, 6) Basic Defensive Maneuvers, 7) Energy Management, 8) Threat-Specific Maneuvering, 9) Adversary Tactics (and counter-tactics), 10) Combat Aircrew Concepts, 11) Combat Arrivals and Departures, and 12) Situational Awareness.

It was pretty easy for us to re-write this because we simply took our CATT curriculum, streamlined it, and applied it to this project. AMWC CATTs leads the way in discussion and development of these topics, and we were happy to take the lead in this project. G060 really sounds like tactics this time, and hopefully you'll be seeing it at your base soon.

In addition to other topics, we incorporated the curriculum of our newest class, Combat Aircrew Concepts, as much as possible in the new G060 program. CAC is our newest CATT class, and in it we discuss techniques and procedures that the aircrew can use to better operate in the actual combat environment. Briefly, CAC discusses improving crew coordination and communication, combat route selection, body and aircraft armor, aircraft hardening, and combat formation techniques. We also cover lookout doctrine (scanning) and RVDs (Rear Vision Devices--the "Bubble") and stress it's value to AMC aircrews. In addition, we explain different types of bullseye point procedures, threat calls, and operating with different kinds of CAP.

We think that discussion of these concepts is critical to the line aircrew member. Tactics is a critical issue for all of us all of the time, not just during ORIs or actual contingencies. Now, hopefully, the G060 training program will introduce us to important tactical concepts before we go to war, not after.

Contributing to the Tactics Times

The Tactics Times is written and distributed quarterly by the the Air Mobility Warfare Center's Combat Aircrew Tactics Training (CATT) faculty at AMC's Air Mobility Warfare Center in Fort. Dix, NJ. Each edition of The Tactics Times provides a forum for the most current issues in the command related to tactics. Our staff will accept any tactics-related articles, columns, editorials, and updates for incorporation in the newsletter. To contribute, contact Captain John Golden at DSN 944-1163/1157 or fax us directly at 944-1156.

Want more information on our courses? Find a computer, get on-line, and go to http:\\infosphere.safb.af.mil\~amwc for the Air Mobility Warfare Center's home page. Our web site contains information on the wide variety of courses taught here at the Warfare Center for Air Force professionals. Check it out!

C-141 Bubble Update

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to put the fighter "on the beam". Combat Camera produced a video that will be used to train aircrews for the November test.

The test in November will collect data defining the difference in threat detection and avoidance between standard aircraft and those equipped with bubbles. The 33d FLTS will be monitoring the test aircraft and crews to insure that only scanning from the aft quadrant is applicable. The data will be compiled and presented to a future AMC Tactics Board. The Board will make a decision to proceed with additional testing or lay scanning to rest. I will present the findings in the next issue of The Tactics Times.

Opinion...

Edited by Capt John Golden, AMWC Tactics

Be careful what you wish for...

I once got some good advice regarding a project I was working. Someone told me "Be careful what you wish for... you just might get it." This is good advice for AMC operators and tacticians. We are frequently asked why most AMC aircraft are not equipped with radar warning receivers (RWR), electronic jamming pods, defensive systems, real-time information into the cockpit, etc. We are probably not the best OPR for these types of questions, but let me share a different perspective on this issue. Before you ask why we don't have RWRs or other systems, ask yourself the following:

1. Are you willing to become an RWR expert? You have to know how it receives information, processes it, prioritizes it, and displays it. Also it's limitations, capabilities, malfunctions, electrical requirements, etc. Are you also willing to learn in depth about the radars that it is capable of detecting? How about their capabilities, limitations, tactics, and associated weapons systems? How about developing associated counter-tactics for your particular mission and airframe?

2. Apply question #1 to an electronic jamming pod, defensive system, or other systems as applicable.

3. Regarding real-time information into the cockpit, are you willing to learn indepth about all the sources of this information, how it is provided, how to interpret it, what it means, and develop associated counter-tactics?

4. Are you willing to develop a training plan, evaluation criteria, and tests, incorporate it into your simulators and flights, and oversee training for all unit personnel?

5. Are you willing to devote time to reviewing the latest quarterly software upgrades and subsequent system capability upgrades? How about inputing those into your training program and evaluation program?

6. Do you know one aircrew member in your unit who will sign up to do all the above?

7. How is your unit going to pay for range time to practice employment of above systems? Can you still meet other unit requirements and successfully train, evaluate, and fly with these systems at the same time?

8. Who is going to take responsibility for operating these systems in flight? Can you effectively operate the system, provide appropriate crew coordination and still accomplish normal crew duties while directing counter-tactics?

9. If deemed necessary, do you think the Air Force can afford to put another aircrew member on board your aircraft to operate such a system? What programs are you willing to cut to fund this manpower requirement? Can you convince Congress that we need more manpower for this initiative?

The bottom line is that these are not "magic" boxes that tell you what to do. Installing defensive gear into AMC aircraft requires a BIG committment, not only in $$ but resources for training and maintenance as well. Although the mysterious winds of change could shift AMC priorities at any time, you have to admit that the level of commitment for these programs is staggering.

Our Opinion Column is designed to voice the opinions of the AMC and Air Force community in a non-attribution format. Your contributions on tactical-oriented issues are welcome. See page 2 for details.

Tactics Analysis and Reporting Program (TARP)

What it means to you, the operator...

MSgt Todd Raetz, 67 IG/OL-DX (AIA)

The important role of tactics in the mobility mission requires accurate information on how a potential adversary operates. Tactics development, however, based only on published threat system weapons, ranges and capabilities doesn't cover the whole picture of how an adversary will employ its arsenal. Clearly, the how needs to be addressed before we can develop truly effective blue tactics, and that's exactly what the Tactics Analysis and Reporting Program (TARP) can provide.

The program is chaired by HQ USAF/INX, managed through the Air Intelligence Agency (AIA), and consists of designated Tactics Analysis Teams (TAT) representing a mixture of MAJCOMs. Traditionally, the program has provided the fighter community with a realistic view of how adversaries operate in the air-to-air arena. This goes well beyond the facts and figures we're all familiar with in MCM 3-1 by delivering tailored products including three-dimensional video tapes on specific geographic regions and combat roles. The videos vividly illustrate adversary air tactics based on "real events" as opposed to notional scenarios. Other products include comprehensive reports published by each TAT that provide details on adversary tactics related to their specified area of operation.

AMC involvement in the program has been nonexistent due to the predominant air-to-air focus. The potential application, however, for AMC tactics is significantly strong and we're in the process of bringing mobility requirements into the program. Our proposal to establish a new Mobility Tactics Analysis Team (MTAT) has been endorsed by HQ AMWC/CC and HQ AMC/DO/IN, and will be submitted to HQ USAF for validation upon completion of the AMC requirements review. The Air Staff fully supports this proposal to the point that a dual AFSOC/AMC Team might be created in response to the unique needs of the heavy community. More to follow on the actual TAT structure that will be created for AMC in future editions of the Tactics Times.

So what exactly does all this TARP and TAT acronamia really mean to you, the operator? Simply stated, you--the operator--form the foundation of the program through the teaming with AIA analysts, linguists, and collection specialists to determine operational tactics of potential adversary forces. Mobility requirements related to Integrated Air Defense Systems (IADS), and the rapidly evolving arena of Information Warfare (IW) are the two main areas which AMC operators will benefit from through this program. Imagine the ability to view tanker orbits, drop zones, holding areas, or relief/combat zones, combined with the actual IADS and IW threat, prior to your mission. Obviously, this insight would give AMC planners and operators a tremendous advantage, and that's the sole objective of this program.

Once established, the Mobility TAT will be used to compliment existing AMC tactics initiatives throughout AMC, support HQ AMWC curriculum development, and supplement HQ AMWC Just-in-Time training efforts for contingency deployments. Delivery of timely and accurate information to you--the operator--is what makes this program vital to mission success

The Passive Detect Model

Capt James J. Albrecht, AMWC Tactics

I want to introduce you to a tool you may find valuable for mission planning purposes. The Passive Detect (PD) Model is a computer program used to model electronic combat scenarios. PD evaluates the capability of passive detection systems to detect and locate airborne or ground-based targets.

Passive detection systems are kind of the opposite of radars, in that they do not actively transmit any energy. A radar will transmit energy and then "listen" for the echo to determine a target's location. Passive detection system just "listen" for any energy transmitted from targets in order to locate and track them. Detection can be based on the collection of intentional or unintentional emissions from the target aircraft.

PD has two primary modes of analysis: an area of coverage mode, and a route specific mode. The area of coverage mode can be displayed in either grid or rings format. The route specific mode indicates the ability of the passive detection systems to detect/locate the target at specific points along the target's route. PD's accuracy is directly tied to the quality of its database. Information in the equipment database can be tailored to represent any specific passive detection site, target emitter, or jammer platform. PD uses elevation data from Defense Mapping Agency.

Now the good news: PD is produced by the Air Force Information Warfare Center, and is available without charge to your unit. PD runs on a SPARCstation, so if your intelligence folks have Combat Intelligence System and available disk space, they can get PD software and add it to their system. If you have more questions, the folks at AFIWC/SAV are the real experts on PD, and you can reach them at (210) 977-2706 or DSN 969-2706.

AMC Buys New GPS Units

Capt Michal Rechner, AMWC Tactics

Recently, HQ AMC/DOT announced that a contract had been awarded to purchase approximately 1200 Bendix/King KLX 100 hand-held GPS units. One unit was purchased for each AMC aircraft, plus a few spares, and deliveries should begin by the middle of November.

AMC units will be receiving the GPS units and a training plan and concept of operations written by AMC/DOT. Each aircrew member will be required to attend training prior to being authorized to use the new units in flight. The training consists of a Power Point presentation, a CBT lesson, and a video tape.

KLX-100

The unit purchased is not only a GPS, but it also contains a VHF radio. It has all of the feature found on most hand-held GPS units including a backlit LCD display, "moving map", international database of airports, navaids, and intersections, as well as ARTCC and Flight Service Station frequencies. There is also space for 500 user-defined waypoints and 30 flight plans of up to 30 waypoints each.

Earlier message traffic indicated that all electronic equipment, including GPS and laptop computers, that had not been tested for electromagnetic interference (EMI) and electromagnetic compatibility (EMC) were not authorized for use below 10,000 MSL. At the time this article was written, the KLX 100 had passed EMI testing and was to begin EMC testing. By the time the units get to the field, testing should be complete.

For those of you wondering how the GPS (continued on page 8)

Yes, you can contribute to the Tactics Times!

Want to get famous and let everybody in the command know how smart you are? One easy way is to contribute to the Tactics Times. We'll accept any tactics-related articles for publication from AMC or related units, other commands, and even other services. Our goal is to lead the way by keeping the command informed on the latest information in the tactics community. Contact Captain John Golden at DSN 944-1156/7 for more information, or by e-mail at goldenj.awc@smtp-gw1.mcguire.af.mil.

AN/TPN-27B Zone Marker Test Update

Captain Jeff Degler, 33rd Flight Test Squadron

Air Mobility Command's primary method for instrument meterological conditions (IMC) airdrop by the C-141 and C-17 relies on a navigation computer-calculated release solution updated with Zone Marker (ZM) inputs. Presently, the C-141 and C-17 use the ground-based AN/TPN-27A ZM as the primary update source to the navigation computers.

Reliability and maintainability problems with the AN/TPN-27A ZM highlighted the need to replace it with a more effective ZM. Warner Robins-Air Logistics Center (WR-ALC)/LYRE is the lead organization in replacing the current ZM with the AN/TPN-27B Mini-ZM System (MZM).

The 33d Flight Test Squadron (FLTS) performed an Operational Utility Evaluation (OUE) on the MZM. The OUE assessed (1) the C-141 and C-17 SKE-equipped aircraft with the MZM and (2) the ability to airdrop and deploy the MZM by AFSOC CCT personnel in a simulated chemical environment and during night operations. The OUE was completed using C-141 single ship/formation airdrop mission and C-17 formation airdrop missions. The C-17 consistently interrogated the MZM 17-20 NM from the drop zone, and the C-141 interrogated the MZM between 10-20 NM. Drop scores were all satisfactory. More testing is in the works...

AMWC Tactics/Intel FY97 Courses

Combat Aircrew Tactics Training (CATTS):

97-1: 28 Oct-8 Nov
97-2: 9-20 Dec
97-3: 3-14 Feb
97-4: 10-21 Mar
97-5: 5-16 May
97-6: 16-27 Jun
97-7: 4-15 Aug
97-8: 8-19 Sep

Senior Officer's Tactics Course (SOTC):

97-1: 19-20 Nov
97-2: 27-28 Jan
97-3: 20-21 Feb
97-4: 23-24 Apr
97-5: 29-30 Jul
97-6: 20-12 Aug

AMC Intelligence Course:

97-1: 24-28 Feb
97-2: 19-23 May
97-3: 25-29 Aug

If you'd like to attend any of our courses, please contact MSgt Dan Repp at DSN 944-1157 or commercial (609)562-1171. There are lot of class slots still available.

Reduced Interval Formation Test Update

Major Ray Oltman, AMWC Tactics

Phase III of the KC-135 RIFT (Reduced Interval Formation Test) is complete and the interim report is out. In the first edition of The Tactics Times I reported on the RIFT, and now I'm happy to say the in-place turn appears to work from our normal one mile spacing. We should be cautious about trying this maneuver from half-mile spacing, and we may conclude it is not as helpful from reduced separation.

The pilots found the reduced interval formations easy to fly. We looked at compressing the formation vertically and then both verticall and horizontally. At this point we are only considering these options for day VMC. The last word will come from HQ AMC after the final report. We're having a meeting at HQ AMC in October to discuss phase IV, which incorporates the fighters into our formation test.

Another thing coming down the pipe is a revised quick flow procedure. HQ AMC/DOTK is working on this because fighter pilots still want quick flow. The concept is expanding to include multiple flights of receivers flowing across the boom. Count on testing to start in the near future.

General Kross, AMC/CC, supports the continuing emphasis on tactics, so please keep those TIPs and TAARs flowing.

Automatic Associator in the 21st Century

SSgt Joel Gonzalez, 67IG/OL-DX (AIA)

The advent of the twenty-first century is upon us, and technological advances in obtaining and distributing information will shape the direction we're heading. That's why Air Mobility Command (AMC) continues to take strides in meeting the demands of information dominance. One of the ways AMC has already done this is by acquiring Automatic Associator for many of their active airlift and tanker units.

What is Automatic Associator? It's a computer-based signal receiving system that provides timely data on electronic radar emissions from a country's air defense radar systems. Since AMC's theme is Global Reach, Automatic Associator is one of the tools AMC saw necessary to obtain to enhance worldwide mobility operations.

Automatic Associator possesses a valuable device in adversarial electronic radar signals exploitation. For example, the system is very deployable, making it available to any location in the world at a moment's notice. Also, once at the deployed location, Automatic Associator can operate temporarily as a stand alone intelligence system. Through operator interface an analyst can determine the validity of an electronic radar emission and as signal validation occurs correlation to known locations results automatically or by an operator. Maintenance of a dynamic locational database, or the positioning of enemy threat radar system is the most important function of Automatic Associator. This information is passed onto AMC aircrews greatly increasing aircraft survivability. The system is also capable of providing electronic emission data on possible new locations where adversarial radar threats, prior to mission departure may have been established. (continued on page 8)

Introduction to the RC-135

Capt. Sam Kang, AMWC Tactics

This is a general overview of four models of the RC-135, their missions and capabilities. The RC-135 aircraft are highly modified Boeing KC-135 and C-135 airframes. Crew composition consists of two pilots, two navigators, electronic warfare officers (EWO), inflight maintenance technician (IMT), and Air Intelligence Agency (AIA) specialists. All RC-135 have state of the art navigation system, which includes GPS, stellar, inertial, and doppler system (GSIDS). Also there is an extra navigator providing manual back-up using celestial and radar fixes.

Rivet Joint (RJ) consists of RC-135V and W model to provide Electronic Intelligence (ELINT) to theater and tactical commanders. The soul of the RJ is the Automatic Electronic Emitter Locator System (AEELS) which can provide near-real time (NRT) location and identification of enemy land-based, naval, and airborne radar systems. This data is used by allied assets and decision makers on the enemy threat and radar activity.

Cobra Ball is a RC-135S model providing Foreign Instrumentation Signals Intelligence (FISINT). Their mission is collecting and recording data associated with the performance of strategic and tactical weapon (ballistic missiles) systems. This data is used by National Command Authorities for arms treaty verification and development of US Strategic Defense.

Combat Sent is a RC-135U model and their mission is Measurement and Signatures Intelligence (MASINT). Used mainly by scientific and technical (S&T) intelligence community to support weapons system and countermeasures development. The information gathered will determine, in detail, the operating characteristics of an opponent's (continued on page 8)

GPS Update
continued from page 5

units are to be used in flight, your questions will be answered when you read the concept of operations developed for each AMC aircraft by AMC/DOT. All phases of flight are addressed.

The POC at HQ AMC/DOT is Maj Bob Davis, DSN 576-5305.

Automatic Associator in AMC
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Another feature Automatic Associator provides is an up-to-date intelligence database. This database is a secure internet furnishing an operator information on a country's political or social stability--keeping AMC aircrews abreast of potential dangers existing in a hostile country. Also, Automatic Associator interfaces with the Combat Intelligence System, Air Force Mission Support System, and CTAPS. These features are critical in making Automatic Associator an integral part of mission success by AMC aircrews.

The future of distributing and obtaining information in a near-real-time manner is today, and AMC is accomplishing their goals of meeting this challenge by furnishing as many units as possible with Automatic Associator. The durability and deployability of the system makes it a viable asset to AMC operations in the event of mobility operations to any area of the world. Also, it's ability to receive data anywhere in the world and provide a secure internet makes it a valuable, multi-dimensional asset for AMC. Automatic Associator is the future--today--in information exploitation.

RC-135 Introduction
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radar. This information will then be used to modify or develop a new Radar Warning System.

Whenever you deploy to exercises like Green Flag or contingency operations you will see the interoperability of AWACS, RJ, and Joint Stars providing the warfighters the necessary surveillance and command and control to effectively exploit and counter enemy intent. The RC-135 Rivet Joint is integral part of this triad and critical component of our success on the battlefield.

New Night Vision System for AMC

Capt. John Golden, AMWC Tactics

The new night vision system, designated the AN/AVS-8, is a Type 1 (direct vision) helmet-mounted night vision imaging system that improves situational awareness and visual acquisition capability during periods of low natural illumination, enabling the aircrew member to see environmental features that are below the unaided visual threshold.

The new NVS design is similar in appearance to the AN/AVS-6, and allows an individual to look beneath or around the binocular assembly to view flight instruments. Developed specifically for ejection-seat use and long duration wear, the AN/AVS-8 is one pound lighter than the AN/AVS-6 and provides 45 degree field of view. It incorporates an internal battery, longer battery life, and no more independent battery pack. A "notch filter" has also been added to allow HUD information to be passed through the system, allowing the pilot to view both HUD information and the surrounding environment through the NVS.

The most exiting feature of the AN/AVS-8 is the flash-guard, which allows for operation in high-light situations and also protects the crew from being blinded by flashes of bright light. This feature is especially helpful for those operating in the combat environment, because bright lights from the battlefield, ordnance detonation, countermeasures, or the local terrain/environment can blind momentarily aircrews.

Flight testing begins in Feb. 1997, and AMC will provide aircraft, crew, and life support. Production should begin in 1998.